

REMARKS / ARGUMENTS

In the above-identified Office Action claims 1-7 have been rejected as unpatentable over Stewart et al. The Examiner has stated that Stewart et al. teaches gap between a thermoplastic adhesive and a printed circuit board. The Examiner has stated that it would have been obvious to put an adhesive sheet on the wiring pattern so as to leave a space between the adhesive sheet and the PCB so far as the adhesive invariably has gaps therein due to its nature. Applicant disagrees with the Examiner's conclusion in this regard, noting that there is no suggestion from any cited art to place an adhesive sheet on the wiring pattern much less to place it so as to leave a space between the adhesive sheet and the PC board. Stewart et al. teaches the use of a thermoplastic adhesive which are termed joints, contacting both the device and the board and which are "formulated to have melt flow properties which allow it to flow across the gap between the thermoplastic adhesive and the printed circuit board and make contact with the printed circuit board" (para 0093). As stated in paragraph 0093, "the action of gravity alone is sufficient to pull the molten adhesive across the gap between the thermoplastic adhesive and a printed circuit board." Thus, as stated in the abstract of Stewart et al., "The assembly is heated at solder reflow temperatures to at least soften the thermoplastic adhesive sufficiently to flow across the gap and provide a thermoplastic adhesive joint between the surface mounted electronic device and the printed circuit board" (Stewart et al. abstract). There is no teaching in Stewart et al which proposes to heat the intervening air between the adhesive sheet and the printed circuit board and using that heated air to bond the adhesive sheet to cover an area of the printed circuit board to be mounted with the electronic component. As a result, Applicant does not believe that there is a teaching or suggestion by Stewart et al. which would render the subject invention obvious as now recited in Claim 1.

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Claims 1-7 have also been rejected as unpatentable over the Japanese reference to Kumakura. The Examiner has stated that Kumakura teaches that it is old to provide an anisotropic layer between a circuit board and a surface mounted electronic device. However, there is no teaching in Kumakura that once a space has been formed between the adhesive sheet and the printed circuit board that such space (air) is heated, thereby bonding the adhesive sheet over an area of the printed circuit board. More specifically, Kumakura teaches "heat pressing" to apparently push the semiconductor chip into and bond with the circuit board. The Examiner has stated that "the adhesive invariably has gaps (or pores) therein due to its nature," however, even assuming the adhesive does have such gaps or pores (which the Examiner has not proven), there is no teaching that heating the gap or pores would cause bonding of the adhesive sheet to the circuit board. Applicant's invention comprises the heating of the air between the printed circuit board and the electronic component and not the air within the adhesive. This is a substantial difference between Applicant's invention and the prior art and this difference is now believed to be adequately claimed and thus defines over the art.

Applicant hereby requests reconsideration and reexamination thereof.

No further fee or petition is believed to be necessary. However, should any further fee be needed, please charge our Deposit Account No. 23-0920, and deem this paper to be the required petition.

With the above amendments and remarks, this application is considered ready for allowance and applicant earnestly solicits an early notice of same. Should the Examiner be of the opinion that a telephone conference would expedite prosecution of the subject application, he/she is respectfully requested to call the undersigned at the below listed number.

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Respectfully submitted,



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